

A CORRELATIVE STUDY ON LANGUAGE AND NON-LANGUAGE STUDENTS' METACOGNITIVE ASPECTS OF SPELLING

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Abstract

Over the past three decades, metacognition, including both knowledge and regulation of cognition, has become a major player in educational studies. Most studies show that metacognition plays a primary role in predicting, for instance, students' language performance.

This paper examines some aspects of spelling-related metacognition of Flemish first-year university language students (LS; n=186) and non-language students (NLS; n=139) as a predictor for spelling performance. In the first part of the study, the informants completed two spelling tests: (T1) a dictation exercise with 30 words and (T2) a correction test with 20 words. In both tests, they indicated their level of confidence on a 3 point Likert-scale. The informants were then asked to fill in an attitude questionnaire, using a 5 point Likert-scale. Three key questions were asked:

(Q1) How good is your spelling compared to other students? (scale: very poor / poor / average / good / very good);

(Q2) How often do you have spelling problems as far as the following spelling issues are concerned: (a) Dutch verbs, (b) English loan verbs, (c) apostrophes, (d) capital letters, (e) memory words, (f) hyphens? (scale: never / seldom / regularly / often / always);

(Q3) How often do you check your written work on spelling? (scale: never / seldom / regularly / often / always).

All results were analysed using linear regression within SPSS.

In practical terms, the results of this study can be utilised to give students personalised spelling advice.

The theoretical aspects this study reveals are, amongst others, that LS tend to have a higher metacognition than NLS as far as (Q1) and (Q2) are concerned, but not for (Q3). On the other hand, LS score better than NLS on both tests. There is a positive correlation between (Q1) and the spelling tests T1 and T2 ($p < 0.001$), while the correlation between (Q3) and the spelling tests is not significant.

The main result of this study is that there is a significant ($p < 0.001$) correlation between (Q2) and the results of the spelling tests: students who spell well appear to perceive themselves as competent/better spellers. The correlation is visible in the T2 (correction) test (LS coef.: -1.629; NLS coef.: -2.115) as well as in the T1 (dictation) test (LS coef.: -1.762; NLS coef.: -1.560).

This study shows that students' metacognitive knowledge matches their actual spelling performance.

Keywords: spelling knowledge, metacognition, metacognitive knowledge, higher education.

1 BACKGROUND

1.1 Spelling knowledge and attitude

Over the past three decades, metacognition, including both knowledge and regulation of cognition, has become a major player in educational studies ([1], [2]). Most studies show that metacognition plays a primary role in predicting, for instance, students' language performance ([3]). The didactical-linguistic implications of metacognition are mostly keenly felt in the learning of basic skills, such as reading and writing. Writing has been called 'applied metacognition', more specifically 'declarative metacognitive knowledge' ([4]), but to date, spelling has not been studied extensively ([5]), though

several studies on the spelling performance of final-year secondary school students and first-year college and university students reveal their results to be rather weak ([6]).

People's general attitude towards (the importance) of spelling, however, has been the subject of several studies. For instance, according to the *Workplace Survey 2010*, in evaluating applicants and their letters of application, Dutch managers very much take spelling errors into consideration. In fact, it appears that 59% of Dutch recruiters reject candidates if their letters of application contain 3 to 5 spelling errors ([7]). Additional research on the attitude of HR-managers as compared to 'ordinary people' and teachers shows that there is hardly any difference between HR-managers and non-professionals, though teachers tend to attach more importance to spelling errors than the other groups ([8]). This can be related to the 'Language Expectancy Theory', that states that the image of the sender might be influenced negatively due to expectancy: readers have certain expectancies of language use based on their individual assessment of the sender ([9]). Also, 60% of teachers confirm that their students have a negative attitude, or even a disinterest, in spelling ([10]) and 43% of Flemish secondary-school teachers rate their students' spelling as 'poor' or 'very poor' ([11]). All in all, spelling undoubtedly seems to remain a major issue in language performance in general.

1.2 Metacognitive aspects of spelling

Though attitudinal aspects towards spelling have been the subject of previous research, real metacognitive aspects of spellers themselves have hardly been studied. [12] do focus on metacognitive aspects of spelling performance. They claim that several facets of metacognition as described by [13] are at play in proficient spelling: metacognitive experiences (ME), metacognitive knowledge (MK) and metacognitive skills (MS).

They examined the spelling knowledge and metacognition of 2095 first-year university college students (in four fields of study) by means of a dictation test. For the metacognition, informants had to complete two questionnaires. The first one measured the following metacognitive aspects: (1) how do informants judge their competence according to other students (on a 7-point Likert-scale); (2) how often do they experience problems concerning spelling types (on a 3-point Likert-scale); (3) how often do they spell-check their written work (on a 3-point Likert-scale).

The second questionnaire addressed the participants' 'feeling of confidence' (hence FOC) towards each spelling question (on a 4-point Likert-scale). FOC relates to metacognitive experiences.

The main outcome of this study was that proficient 1st-year college students tend to underestimate their spelling performance more so than poor spellers do.

1.3 Research question

In this paper, we want to examine some metacognitive aspects of Flemish first-year university language students versus non-language students as a predictor for spelling performance. We not only try to find out whether (part of) the results of [12] can be confirmed, but also, and especially, whether there are any significant differences between language students (hence: LS) versus non-language students (hence: NLS).

2 METHODOLOGY

This paper examines some metacognitive aspects of Flemish first-year university LS (n=186) and NLS (n=139) as a predictor for spelling performance. The LS population were first-year language students at the Department of Translation, Interpreting and Communication at Ghent University (Belgium), the NLS were students in the first year of the bridge program at the Department of Educational Studies, also at Ghent University. A prerequisite for this bridge program is that the students have already obtained a bachelor's degree at college. The tests described below were carried out collectively in classroom settings. Participants were informed about the research and consented to participate.

In the first part of the study, the informants completed two spelling tests:

- (T1) a (oral) dictation exercise involving 30 words;
- (T2) a (written) correction test involving 20 words.

The tests were based on [13], and tests made by dyslectic students were not taken into account for the purposes of this study.

On a separate occasion, the informants were asked to fill in an attitude questionnaire using a 5 point Likert-scale. This attitude questionnaire was completed in the same week during the second semester in electronic form.

Three key questions were asked (based on [13]):

- (Q1) How good is your spelling compared to other students? (scale: 1=very poor / 2=poor / 3=average / 4=good / 5=very good);
- (Q2) How often do you have spelling problems as far as the following spelling issues are concerned: (Q2.1) Dutch verbs, (Q2.2) English loan verbs, (Q2.3) apostrophes, (Q2.4) capital letters, (Q2.5) memory words, (Q2.6) hyphens? (scale: 1=never / 2=seldom / 3=regularly / 4=often / 5=always). Both rule-related and memory-related spelling rules were taken into account;
- (Q3) How often do you spell-check your written work? (scale: 1=never / 2=seldom / 3=regularly / 4=often / 5=always).

Q1 and Q2 deal with metacognitive knowledge (MK), while Q3 assesses metacognitive skills (MS). According to [13], MK is 'declarative knowledge stored in the memory and comprises models of cognitive processes. It also encompasses information about people (including one's self), as well as information about tasks, strategies, and goals'. MS refers to 'the deliberate use of strategies (procedural knowledge) in order to control cognition'.

All results were analysed using linear regression within SPSS.

3 RESULTS

From these tests, several results can be distilled. In this paper, we will focus on the questions raised in section 1.3, and we will thus mainly focus on the difference between LS and NLS.

3.1 Spelling knowledge

Table 1 gives the results for the two spelling tests (T1) and (T2). For (T1) LS score an average of 91%. The score for (T2) is lower at 81%. For NLS the outcome is 82% and 72%, respectively.

Table 1: results for the spelling tests (T1) and (T2)

Spelling tests	LS (n=186)		NLS (n=139)		total (n=325)	
T1	27.32/30	91.08%	24.63/30	82.10%	26.17/30	87.22%
T2	16.24/20	81.21%	14.36/20	71.76%	15.43/20	77.15%
average	43.57/50	87.13%	38.98/50	77.96%	41.60/50	83.19%

These results, with LS scoring 10% better on average than NLS, are in line with the expectations, as spelling forms a major part of the LS-first-year curriculum. The tests also show that students are better in writing words correctly (T1) than in detecting words spelled incorrectly (T2).

3.2 Spelling metacognition

Table 2 lists the mean results for the three metacognition questions. LS tend to have a higher metacognition than NLS as far as (Q1) and (Q2) - and thus MK - are concerned, but not in terms of (Q3) or MS.

Table 2: means for the metacognition tests (Q1), (Q2) and (Q3)

metacognition	LS (n = 186)	NLS (n = 139)
MK		
Q1	3.37	2.97
Q2	2.42	2.86
Q2.1	2.12	2.82
Q2.2	3.07	3.66
Q2.3	2.31	2.80
Q2.4	2.16	2.29
Q2.5	2.02	2.47
Q2.6	2.82	3.11
MS		
Q3	4.01	4.26

LS think they perform better than their peers in comparison with NLS (Q1). This may be attributable to the fact that spelling forms a major part of their first-year curriculum. NLS seem to check their written work for spelling more often (Q3), and they experience more spelling problems than LS, in general as well as for each of the six spelling types mentioned in the questionnaire (Q2). NLS have problems with spelling more often than LS.

3.3 Spelling knowledge versus spelling metacognition

Table 3 lists the results for the correlations between the two tests (T1) and (T2) on the one hand, and the metacognition tests (Q1), (Q2) and (Q3), on the other.

Table 3: correlations between the spelling tests and the metacognition tests

correlations	LS (n = 186)	NLS (n = 139)	total (n=325)
Q1 and T1	0.082 (sig. 0.000)	0.115 (sig. 0.000)	0.471 (sig. 0.000)
Q1 and T2	0.781 (sig. 0.006)	1.547 (sig. 0.000)	1.432 (sig. 0.000)
Q2 and T1	-1.762 (sig. 0.000)	-1.560 (sig. 0.000)	-2.761 (sig. 0.000)
Q2 and T2	-1.629 (sig. 0.000)	-2.115 (sig. 0.000)	-2.308 (sig. 0.000)
Q3 and T1	0.070 (sig. 0.014)	0.051 (sig. 0.058)	0.260 (sig. 0.147)
Q3 and T2	0.436 (sig. 0.230)	0.792 (sig. 0.004)	0.399 (sig. 0.017)
T1 and T2	0.331 (sig. 0.000)	0.492 (sig. 0.000)	0.471 (sig. 0.000)
Q1 and Q2	-0.792 (sig. 0.000)	-0.633 (sig. 0.000)	-0.752 (sig. 0.000)
Q1 and Q3	0.050 (sig. 0.307)	0.197 (sig. 0.004)	0.068 (sig. 0.100)
Q2 and Q3	-0.175 (sig. 0.264)	-0.049 (sig. 0.725)	0.013 (sig. 0.897)

From table 3, we can conclude that:

- (1) the correlation between (Q3) and the two spelling tests (T1) and (T2) is not significant, nor are the correlations between (Q3) and either (Q1) or (Q2);
- (2) there is a positive correlation between (Q1) and the spelling tests (T1) and (T2) ($p < 0.001$);

(3) the main result of this study seems to be that there is a significant ($p < 0.001$) negative correlation between (Q2) and the results of the spelling tests. The correlation is visible in the T2 (correction) test (LS coef.: -1,629; NLS coef.: -2,115) as well as in the T1 (dictation) test (LS coef.: -1,762; NLS coef.: -1,560). Students who spell well appear to perceive themselves as competent/better spellers.

4 DISCUSSION

In practical terms, the results of this study can be utilised to give students personalised spelling advice. Further research will focus on (Q2) in trying to set up a typology of the most frequent errors, as compared/related to the FOC related to these spelling types. As for spelling education, most attention should be paid to those items for which the correlation is (very) weak.

The theoretical aspects this study reveals are, amongst others, that metacognitive skills are not significantly related to spelling performance: there seems to be no significant correlation between checking written work for spelling (Q3) and actual spelling performance.

Furthermore, and in line with [4] and [12], students who spell well appear to perceive themselves as competent/better spellers (Q1) and they say they encounter less spelling problems (Q2). In other words, their metacognitive knowledge seems to match their spelling performance. This does not correlate with teachers' beliefs that students cannot judge their own strengths and weaknesses correctly [11].

REFERENCES

- [1] Flavell, J. H. (1976). Metacognitive aspects of problem solving. In: L. B. Resnick (ed.). *The nature of intelligence*. Hillsdale, NJ: Erlbaum, pp. 231–325.
- [2] Schraw, Gregory (1998). Promoting general metacognitive awareness. *Instructional Science* 26, pp. 113-125.
- [3] Klassen, Rob (2002). Writing in early adolescence: A review of the role of self-efficacy beliefs. *Educational Psychology Review* 14(2), pp. 173-203.
- [4] Hacker, D.J., M.C. Keener and J.C. Kirchner (2009). Writing is applied metacognition. In D.J. Hacker, J. Dunlosky and A.C. Graesser (eds.). *Handbook of metacognition in education*. New York: Routledge, pp. 154-172.
- [5] Efklides, Anastasia and Plousia Misailidi (2010). The Present and the Future in Metacognition. In Anastasia Efklides and Plousia Misailidi (eds.). *Trends and prospects in metacognition research*. New York: Springer, pp. 1-18.
- [6] Devos, Filip and Valerie Van Vooren (2010). Een correlatief onderzoek naar de kennis van spelling bij laatstejaarsleerlingen ASO en VWO [A correlative study on the spelling knowledge of last-year students ASO and VWO]. *Logopedie* 23(3), pp. 63-68.
- [7] Van der Eyk, S. and M. van Hooren (2010). Workplace survey 2010. Ook finance manager hecht waarde aan spelling [Also the finance manager pays attention to spelling]. Accountemps.nl. <http://www.accountemps.nl/EMEA/PR-Spelling-Sep2010.doc> [online].
- [8] Devos, Filip and Sofie De Worm (2015)(submitted). 'Recruiters' and teachers on spelling: myth and reality. Anela.
- [9] Burgoon, M. and G.R. Miller (1985). An expectancy interpretation of language and persuasion. In H. Giles and R. St. Clair (eds.) *The social and psychological contexts of language*. London: Lawrence Erlbaum Associates, pp. 199-229.
- [10] Gheuens, K. (2010). De spelling voorbij. Een onderzoek naar het hedendaagse gebruik van spelling bij Vlaamse en Nederlandse jongeren in formele en informele contexten [Beyond spelling. A study of the present day use of spelling among Flemish and Dutch youngsters in formal and informal contexts]. Unpublished masterproof. Louvain: Université Catholique de Louvain.
- [11] Devos, Filip (2012). Grammatica in het Vlaamse lager en secundair onderwijs: een verkennend attitude-onderzoek bij leerkrachten [Grammar in Flemish primary and secondary education: an exploratory study on teachers' attitudes]. *Over taal* 51(5), pp. 134-137.

- [12] Vanderswalmen Ruth, Joke Vrijders and Annemie Desoete (2010). Metacognition and spelling performance in college students. In: Anastasia Efklides and Plousia Misailidi (eds.). Trends and prospects in metacognition research. New York: Springer, pp. 367-394.
- [13] Efklides, A. (2008). Metacognition: Defining its facets and levels of functioning in relation to self-regulation and co-regulation. *European Psychologist*, 13, 277–287.
- [14] De Pessemier P. and C. Andries (2009). GL&SCHR. Dyslexie bij +16-jarigen. Test voor Gevorderd Lezen en Schrijven [GL&SCHR. Dyslexia in +16 year olds. Test for advanced reading and writing]. Antwerpen: Garant.